

REMARKS

This Amendment is being filed with an RCE to continue prosecution of the subject application. By this Amendment, independent claims 1, 25 and 31 have been amended to better define the claimed invention over the references of record and also to overcome the rejection of the claims under 35 U.S.C. 112, second paragraph.

With reference to the Office Action, Claims 1, 3, 6, 25, 26, 31 and 32 stand rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The Examiner asserts in this regard that use of the term “monolithic” in the claims renders the claim indefinite because the claims recite a segment with an etched gap extending though the segment. Although Applicants disagree with the Examiner’s interpretation of the term “monolithic,” in the interest of advancing prosecution of the application, the term has been removed from the claims, thereby rendering this rejection moot. Also for the record, Applicants continue to disagree with the Examiner’s decision to withdraw all of the claims from consideration except for claims 1, 3, 6, 25, 26, 31 and 32, but acknowledge the withdrawal and reserve the right to prosecute the other independent claims in one or more divisional applications

Turning now to the rejections over the prior art, claims 1, 3 and 25 stand rejected under 35 U.S.C. 102(e) as being anticipated by Sirbu et al. (6,546,029), hereinafter ‘029. Applicants traverse this rejection in view of the amendments to claims 1 and 25. The ‘029 patent discloses a device with an air-gap that is formed through bonding or wafer fusion of two structures (for example, see col. 3, lines 28-37; Fig. 2; col. 5, lines 8-47). However, claims 1 and 25 have both been amended to recite a substrate; an epitaxial structure deposited on the substrate; a

semiconductor laser cavity formed in the epitaxial structure, the cavity having at least one segment and at least one output; and at least one etched gap extending through the at least one segment and separating the segment into first and second spaced apart sections. Claim 1 also recites that the at least one distributed Bragg reflector (DBR) is etched in the epitaxial structure at the at least one output.

Clearly, the amendments to claims 1 and 25 overcome the rejection over the '029 patent. In particular, the '029 patent does not disclose or suggest a structure in which a cavity is formed in an epitaxial structure on a substrate, and an etched gap separates the at least one segment into a first and second spaced apart sections. Further, the recitation in claim 1 that the DBR is etched in the epitaxial structure at the at least one output further distinguishes over the '029 patent since this requires that the semiconductor laser cavity and the at least one DBR both be formed in the epitaxially deposited structure. In contrast, the '029 patent discloses a structure that is formed by bonding two semiconductors together. This means that the two sides of the structure are not to be in the same epitaxial structure as recited in claims 1 and 25 as amended, thus clearly differentiating over the '029 reference. Further, the DBR recited in claim 1 is defined as being etched, which clearly differentiates from the DBR in the '029 patent, which is formed through multiple layers of different indices deposited on a substrate.

In view of the foregoing, Applicants respectfully submit that the rejection of claims 1, 3 and 25 over the '029 patent is traversed.

Claims 1, 6, 25, 26, 31 and 32 also stand rejected under 35 U.S.C. 103(a) as being unpatentable over Behfar-Rad (5,132,983) hereinafter '983, and further in view of Evans et al. (4,952,019) hereinafter '019. Applicants respectfully traverse this rejection in view of the

amendments to claims 1, 25 and 31 because the combination of teachings of the references fails to establish a *prima facie* case of obviousness under 35 U.S.C. 103, i.e. the combination of references does not teach or suggest each of the elements in the rejected claims.

Claims 1, 25 and 31 have been amended to make it clear the recited gap is formed in the laser or waveguide cavity and separates the at least one segment of the cavity into at least first and second spaced apart sections. Clearly, the ‘983 patent fails to disclose or suggest such a structure. In particular, the only structures that are spaced apart by gaps in the ‘983 patent are the two separate laser cavities. The Examiner also asserts that FIG. 16 of ‘983 shows “an etched gap extending through said semiconductor waveguide cavity.” On the contrary, the gap illustrated in FIG. 16 is again between two distinct ring lasers and not through a semiconductor waveguide cavity of one of the lasers, for example. In particular, the facet 190 is at one end of a first laser and is adjacent the facet 192 of a second laser. The combination of elements shown in FIG. 16 forms a ring oscillator.

As for claim 31, which is directed to a laser having a multiple segment laser cavity, once again the ‘983 patent does not disclose a gap formed in at least one segment of a multiple segment laser cavity. The ‘983 reference only discloses multiple lasers interfaced to one another to form a ring oscillator.

Thus, for the foregoing reasons, Applicants respectfully submit that the combination of teachings of the ‘019 and ‘983 patents does not establish a *prima facie* case of obviousness under 35 U.S.C. 103 as to any of the rejected claims and that this rejection is also traversed.

In view of the foregoing, Applicants respectfully submit that all of the rejections are traversed and that the pending claims are patentable and allowable. In addition, Applicants

respectfully submit that withdrawn dependent claims 2, 4, 5, 27-30 and 33-41 should be rejoined and allowed as well. Accordingly, favorable reconsideration of the application is respectfully requested.

Respectfully Submitted,

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Dated: September 26, 2008
Docket No. BIN 9/US